

2005

Prescription Drug Use and Expenditures TRENDS AMONG PRIVATELY INSURED PATIENTS



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and prescription drugs used by privately insured Maryland residents collected annually by the Commission. The MCDB is the primary data source for this and several other publications.

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M.B.A., M.P.A.**

2005

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Executive Summary

Prescription drug spending in Maryland reached \$4.0 billion in 2004, or 14 percent of Maryland's total health care expenditures.¹ At the national level, after double-digit increases over the past decade, the annual rate of increase in prescription drug spending has declined from 15.9 percent in 2000 to 8.2 percent in 2004. The earlier rapid growth of drug spending has been tempered by a number of factors, including the increased use of lower-priced generic drugs, a shift to over-the-counter purchase of certain drugs, a rise in mail-order pharmacy use, slowing in approval of drugs by the Food and Drug Administration (FDA), absence of new blockbuster drugs, and decreased use of specific types of drugs about which the FDA expressed safety concerns.² Despite this slowdown, with projections that spending will continue to rise faster than inflation for the coming years, the Maryland Health Care Commission, along with state leaders, employers, and residents, will seek ways to better understand and contain these costs.

Changes in Prescription Drug Spending, 2001-2005

Prescription drug spending for the typical (median) privately insured Maryland resident under age 65 was \$229 in 2005, up from \$163 in 2001. While there was a substantial increase in spending growth between 2001 and 2002, it was followed by much smaller increases in the three subsequent years. The change in per-person spending over time can be attributed to changes in both prices and use. Over the five-year period, changes in the prices of drugs and changes in the use of drugs were each about equally responsible for the increase in per-user spending: per-user spending increased approximately 41 percent between 2001 and 2005; with the impact of drug price inflation removed, per-user drug spending still rose fairly substantially between 2001 and 2002 but subsequent growth was quite small, so that the overall increase is just 21 percent. As a percentage of per-user spending, the portion reimbursed by insurers fell from 69 percent in 2001 to 63 percent in 2005 meaning that, over this period, consumers paid an increasing portion of their drug expenditures out-of-pocket.

Changes in spending on a prescription basis (rather than per user) followed a similar pattern. The growth in median total spending per prescription was substantial from 2001 to 2002 (though less than for spending per user), then slowed in 2003 and 2004 to approximately 5 percent per year. In contrast to per-user spending which continued to grow modestly from 2004 to 2005, per-prescription spending remained flat between those two years. Similar to total spending, there was a decline in insurer contributions to per-prescription spending, from 70 percent in 2001 to 65 percent in 2005, indicating that consumers paid an increasing proportion of the typical prescription filled.

Prescription Drug Spending Is Concentrated in the Population

Similar to other health care services, the distribution of prescription drug spending is not spread evenly across the population—instead, we find that one-quarter of all users are responsible for more than 80 percent of prescription drug spending in 2005, while the bottom 50 percent of users accounted for only 5 percent of all prescription drug spending. Looking across the distribution at both high and low users of prescription drugs, in 2005, spending at the 25th percentile was only \$65, indicating that 25 percent of users spent less than that amount annually. Spending at the 75th percentile was \$767; persons spending more than this amount represent the top 25 percent of spenders who account for 81 percent of all drug spending. The number of prescriptions filled annually was 2 at the 25th percentile, 5 at the median, and 12 at the 75th percentile.

¹ Maryland Health Care Commission, *State Health Care Expenditures: Experience from 2004*, January 2006.

² C. Smith, C. Cowan, S. Heffler, A. Catlin, and the National Health Accounts Team. "National Health Spending in 2004: Recent Slowdown Led by Prescription Drug Spending," *Health Affairs*, January/February 2006.

Use of Mail-Order Prescribing Is Unchanged From 2004

In 2005, prescription drugs obtained through mail order accounted for only 9 percent of Maryland's prescription drug spending and a similar proportion of prescriptions (when all prescriptions are adjusted to account for a 30-day supply). Both the mail-order share of spending and the share of prescriptions were virtually unchanged from 2004. Compared to national figures, Maryland's lower mail-order share is likely due to two subsections of the Maryland Insurance Article that directly affect use of mail-order prescribing under insurance contracts by (i) prohibiting insurance carriers from mandating the use of mail order or offering enrollees reduced copayments as an incentive to use mail order, and (ii) requiring that insurance carriers allow enrollees to obtain a 90-day supply of a maintenance drug after the initial prescription.

In comparison to earlier years, the proportion of prescriptions that were branded fell slightly, from 55 percent in 2003 to 54 percent in 2004 and 51 percent in 2005. The decline in use of branded drugs is the result of continued emphasis by health plans and pharmacy benefit managers on strategies to increase generic utilization, coupled with the loss of patent protection in either 2003 or 2004 for a number of different branded drugs. Because generic drugs generally cost substantially less than branded drugs, although 47 percent of all prescriptions were for generic drugs, they accounted for only 16 percent of spending and one-quarter of consumer out-of-pocket expenditures. While consumers pay a higher percentage out-of-pocket for less expensive, generic drugs because of the relatively flat copayment structure, where they are available generics remain a better deal for the consumer than branded drugs.

One of the purported advantages of expanded mail-order use is the increased ability to substitute generic equivalents for brand name drugs, in part because the time lag in filling prescriptions allows for more effective use of utilization management techniques, including contacting the prescribing physician to suggest changes. Of interest, in 2005, the proportion of generic drug expenditures and the proportion of generic prescriptions were lower for mail-order than for retail pharmacies. However, mail order is generally limited to 90-day prescriptions; when only 90-day prescriptions are examined, the generic share of expenditures is virtually the same for both retail and mail-order pharmacies—between 12 percent and 13 percent. There is still a difference in the generic share in terms of prescriptions, however, with mail-order again showing a somewhat lower proportion of generics than retail. The higher proportion of branded drug prescriptions but equivalent percentage of branded drug expenditures suggests that mail-order pharmacies may be applying some of their utilization management strategies toward encouraging substitution of less expensive (in place of more expensive) branded drugs.

Concentration of Drug Spending by Drug Class

A limited number of therapeutic drug classes accounted for a significant share of prescription drug spending in 2005; just over one-third of spending was attributable to 10 therapeutic drug classes. The drugs contributing the most to spending are statins, antacids, antidepressants, contraceptives, and anticonvulsants. Median annual spending per user for drugs within each class varies dramatically, from a high of \$555 for statins and \$549 for SSNRI antidepressants to a low of \$43 for narcotic analgesics (pain medications). There is substantial variation in the distribution of spending across therapeutic categories between mail-order and retail pharmacies, and between generic and branded drugs. The generic share of spending in retail versus mail-order pharmacies varied by therapeutic category—of the 9 therapeutic classes where there was some generic spending, there was an even split between those with a higher percentage of retail generic spending compared to a higher percentage of mail-order generic spending. This suggests that the share of spending going toward generic drugs in mail-order pharmacies versus retail pharmacies is driven by type of drug rather than being driven solely by the distribution channel. ■

1 Introduction

Prescription drug spending in the United States reached \$188.5 billion in 2004, representing approximately 10 percent of all health care expenditures.³ After double-digit increases over the past decade, the national annual rate of increase in prescription drug spending has declined from 15.9 percent in 2000 to 8.2 percent in 2004, and has been identified as the leading contributor in recent years to slower growth in overall health care spending. While the rate of increase in prescription drug spending is projected to remain in the single digits for the next decade, it is likely to continue as a source of financial pressure for many health care consumers. In Maryland, prescription drug spending has reached \$4.0 billion or 14 percent of Maryland's total health care expenditures.⁴ With projections that spending will continue to rise faster than inflation for the coming years, state leaders, employers, and residents will seek ways to better understand and contain these costs.

Nationally, overall drug spending has been tempered by a number of factors, most notably the increased use of lower-priced generic drugs. Other factors that have been identified are a shift to over-the-counter use of certain drugs such as antiulcerants and antihistamines, a rise in mail-order pharmacy use, slowing in approval of drugs by the Food and Drug Administration (FDA), absence of new blockbuster drugs, and decreased use of specific types of drugs about which the FDA expressed safety concerns, including COX-2 inhibitors and some antidepressants for children.⁵ Recent clinical studies indicating that certain classes of older drugs (e.g., antipsychotics) are as effective as newer, more expensive drugs may also help to mitigate increases in spending in the near term.

This report provides information about prescription drug utilization and spending for Maryland's privately insured, nonelderly residents in 2005, with highlights of drug utilization and spending trends for the 2001 to 2005 period. The topics addressed include:

- ➔ Consumer spending, per user and per prescription
- ➔ Consumer out-of-pocket costs
- ➔ Distribution of drug spending across the population, including by age and therapeutic drug class
- ➔ Use of retail and mail-order pharmacies
- ➔ Use of branded and generic drugs
- ➔ Variation in mail-order and generic shares of spending by therapeutic drug class

The information provided is an update of the report "Prescription Drug Use and Expenditures: Trends Among Privately Insured Patients, 2003." It is expected that the Maryland Health Care Commission (MHCC) will continue to provide, on an annual or bi-annual basis, the information necessary to track trends in prescription drug use in the State of Maryland. Policymakers, providers, consumers, and other stakeholders should find this information useful as they contemplate cost-containment strategies and are affected by market changes, as with recent initiatives to shift purchases from branded to generic drugs, and from retail to mail-order pharmacies.

A basic mission of MHCC is the dissemination of information to monitor the Maryland health care market. In accordance with this mission, MHCC developed and currently maintains a Medical Care Data Base (MCDB) that includes insurance claim records of noninstitutional and professional services rendered by physicians and nonphysician health care professionals to patients who live in Maryland. In recent years, this database has been expanded to include information on insured prescription drug services, allowing analysis of spending trends and patterns of prescription drug use among privately insured Maryland residents under age 65. Technical notes regarding the MCDB data and associated caveats for this report are included at the end of this report. ■

³ CMS National Health Accounts, <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2005.pdf>.

⁴ Maryland Health Care Commission, *State Health Care Expenditures: Experience from 2004*, January 2006.

⁵ C. Smith, C. Cowan, S. Heffler, A. Catlin, and the National Health Accounts Team. "National Health Spending in 2004: Recent Slowdown Led by Prescription Drug Spending," *Health Affairs*, January/February 2006.

2 Drug Utilization and Spending, 2001-2005

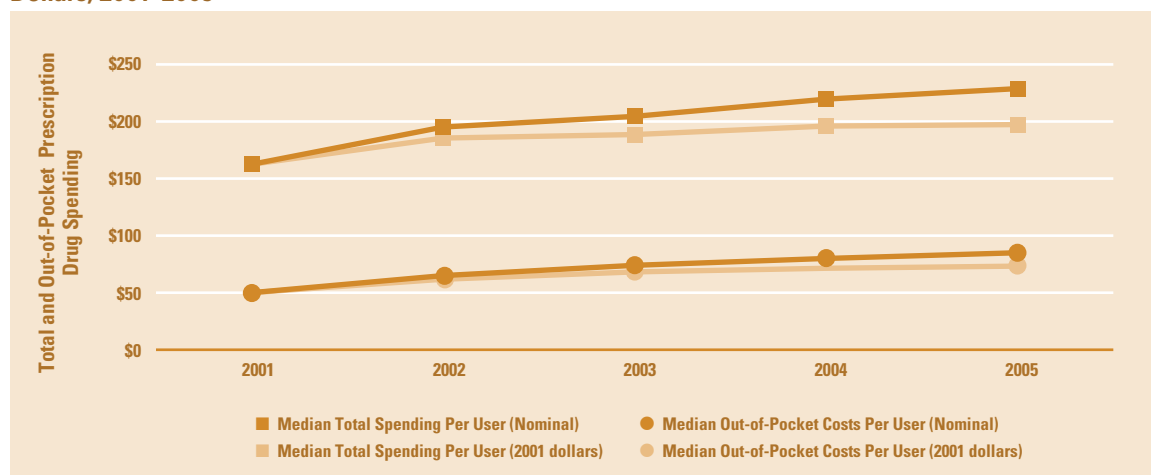
This section provides information about prescription drug utilization and spending by Maryland's privately insured, nonelderly residents in 2005. It examines market trends and changes in utilization and spending over the period from 2001 to 2005. Also discussed is the distribution of drug spending by level of consumers' usage, as well as differences in utilization and spending for purchases through retail versus mail-order pharmacies, and for branded versus generic drugs. Finally, the report examines some of the factors that vary across therapeutic classes of drugs.

How Has Spending Changed in the Past Five Years?

In 2005, median annual expenditures⁶ on prescription drugs for nonelderly, privately insured Maryland residents with some prescription drug use were \$229, meaning that half of these persons spent more than this amount, and half spent less. This amount includes the costs paid by the insurer (\$144 or 63 percent), as well as the out-of-pocket costs paid by the consumer (\$85 or 37 percent).

Figure 1 shows spending for the years 2001 through 2005. The graph presents median total and out-of-pocket spending per user. These estimates represent an annual amount; total spending includes both insurer and consumer expenditures, while out-of-pocket spending represents the portion paid by the consumer and not reimbursed. The top line—median total per-user spending—shows a substantial increase between 2001 and 2002, followed by smaller increases in the three subsequent years. The out-of-pocket portion of spending shows a somewhat similar trend though it rises more rapidly in the first two years before experiencing a slowdown. The difference between these two lines represents the portion of spending paid by insurers—as a percentage of per-user spending, the portion reimbursed by insurers fell from 69 percent in 2001 to 63 percent in 2005.

FIGURE 1: Median Total and Out-of-Pocket Prescription Drug Spending Per User, in Nominal and Real Dollars, 2001–2005



NOTE: Spending in 2001 dollars was adjusted using the drug and medical supply component of the Consumer Price Index.

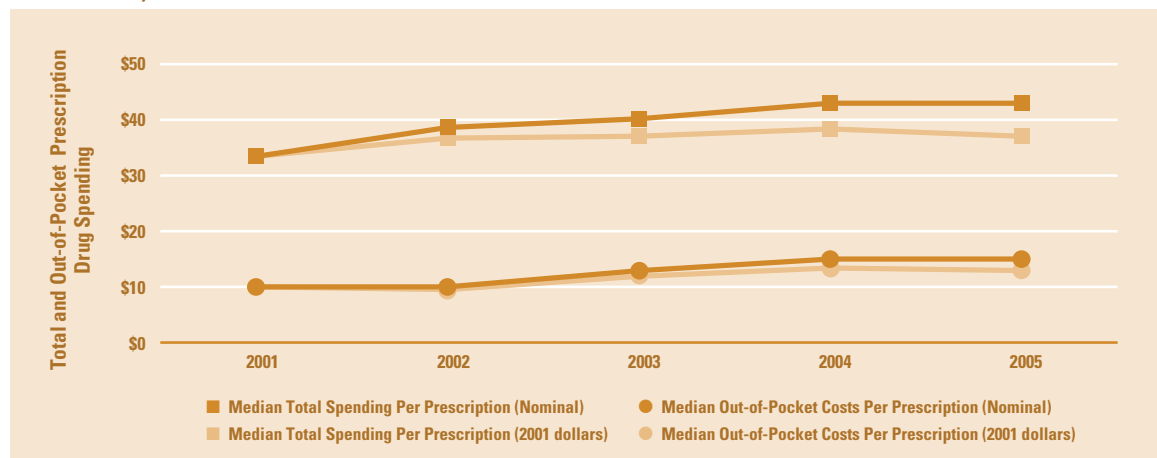
⁶ Throughout the report, the averages provided are, in almost all cases, medians rather than means. This is because there are a large number of users with very small expenditures and a small number with very high expenditures so that the distribution of spending is heavily skewed. This type of distribution is evidenced by the large discrepancy between the mean and median annual expenditure (\$791 versus \$229). The mean figure is heavily influenced by the small number of users with the highest expenditures, while the median represents the spending of the person in the precise middle of the distribution regardless of the high and low values.

The change in per-person spending over time can be attributed to changes in both prices and use. Price changes result when the price of a specific drug is raised or lowered by the manufacturer or in a negotiation between the manufacturer and the health plan or employer. Changes in use reflect increases or declines in the numbers of prescriptions an individual uses or the period of time for which drugs are used. There are also changes in the mix of drugs used—when one drug is substituted for another drug, this may increase or decrease a person’s total spending. In Figure 1, the trend in per-user spending is also shown in 2001 dollars, which removes the effect of price changes. In each set of two lines, the upper line shows spending in unadjusted or nominal dollars, while the lower line displays spending with the impact of price inflation removed.⁷ The line representing spending in 2001 dollars indicates how drug use changed over the time period.

With respect to total per-user spending, when drug price inflation is removed, drug spending still rises fairly substantially from 2001 to 2002, but tapers off through 2004, and then remains flat from 2004 to 2005. Out-of-pocket spending, even after adjusting for the effects of price changes, rises more rapidly than total spending in the earlier period, though its growth also slows from 2003 to 2005.

As shown in Figure 2, the changes in spending on a prescription basis (rather than per user) were somewhat smaller. With respect to median total spending per prescription, there was a substantial increase from 2001 to 2002 (though less than for spending per user). The growth in per-prescription spending slowed in 2003 and 2004 to approximately 5 percent per year (similar to the increases in per-user spending). From 2004 to 2005, per-prescription spending remained unchanged. Changes in consumers’ out-of-pocket costs per prescription exhibit a somewhat different pattern than total per-prescription changes; the change in out-of-pocket spending is highest between 2002 and 2004, with no changes in the first or last year of the period shown. Similar to total spending, there was a decline in insurer contributions to per-prescription spending, from 70 percent in 2001 to 65 percent in 2005.

FIGURE 2: Median Total and Out-of-Pocket Prescription Drug Spending Per Prescription, in Nominal and Real Dollars, 2001–2005



NOTE: Spending in 2001 dollars was adjusted using the drug and medical supply component of the Consumer Price Index.

Table 1 provides an alternative way of viewing changes in spending over time and the relative influence of changes in drug prices versus utilization or quantity.⁸ Here, we examine mean spending, a simple average across all users. In contrast to median spending shown elsewhere in the report, mean spending figures are more heavily influenced by very high spenders; as can be seen in Table 1, mean spending in 2005, for example, was \$791, or almost three and one-half times median spending in that same year.

⁷ The Consumer Price Index (CPI) for prescription drugs and medical supplies is used to deflate the 2002–2005 spending figures. This version of the CPI includes all drugs and medical supplies dispensed by prescription. Mail-order outlets are included. Prices reported represent transaction prices between the pharmacy, patient, and third-party payer, if applicable. The drug CPI is intended to capture changes in the mix of pharmaceuticals on the market (e.g., the mix of lower-cost generics versus higher-cost branded drugs); to the extent that the CPI does not fully capture these changes, there may be some residual price changes that are not accounted for in the “real” prices.

⁸ This approach follows that used in Ginsburg PB, Strunk BC, Banker MI, and Cookson JP. “Tracking Health Care Costs: Continued Stability But at High Rates In 2005,” *Health Affairs* 3 October 2006.

Changes in mean per-user spending showed significant decline after 2002, with the change in spending falling from 17 percent between 2001 and 2002 to less than half that—6.8 percent—from 2004 to 2005. The righthand column in Table 1 shows the residual influence of quantity on spending changes, once the influence of price changes is removed. Changes in use accounted for a substantial proportion of spending changes throughout the period examined; between 2004 and 2005 the rate of growth in spending fell substantially with a drop in utilization responsible for virtually all of the decline. While the rates of change in spending and use in Maryland were somewhat larger than those observed nationally, the general picture of the slowdown in the growth of drug use during this period as the major factor in reining in overall drug spending's growth was similar.⁹ It may be the result of increases in cost-sharing required by health plans as well as other administrative changes designed to constrain use, such as limitations on the use of certain high-cost medications. Additionally, safety concerns around the use of COX-2 inhibitors as well as antidepressants in children were contributing factors.¹⁰ Projections for 2006, however, suggest that these declines are likely to be reversed and that drug-spending growth will be in the 8 percent to 8.4 percent range in coming years.¹¹

TABLE 1: Decomposition of Prescription Drug Spending, 2001-2005

	Mean Spending Per User	ANNUAL PERCENTAGE CHANGE PER USER		
		Spending on Prescription Drugs	Prescription Drug Prices	Quantity
2001	\$523	--	--	--
2002	612	17.0%	5.2%	11.8%
2003	667	9.1	5.2	3.9
2004	741	11.0	3.3	7.7
2005	791	6.8	3.5	3.3

NOTE: The change in prices is based on the Consumer Price Index for drugs and medical supplies with the exception of 2003. For that year, we use an adjusted estimate of price growth because the CPI continued to include Claritin and Prilosec despite their being moved to over-the-counter status. See Ginsburg et al. (2006). The Consumer Price Index for All Urban Consumers (CPI-U) increased by 1.6 percent in 2002, 2.3 percent in 2003, 2.7 percent in 2004, and 3.4 percent in 2005.

How Is Prescription Drug Spending Distributed in the Population?

While use of prescription drugs is widespread and has become an increasingly important component of health care, like other services, most use is concentrated among a relatively small proportion of the population. For Tables 2 and 3 below, prescription drug users were ranked by their level of spending on prescription drugs (the reimbursed and out-of-pocket components combined) to determine how expenditures were distributed across the population.

Table 2 shows that one-quarter of all users are responsible for more than 80 percent of prescription drug spending; 5 percent of users are responsible for more than 40 percent; and 1 percent is responsible for 18 percent of prescription drug spending. The bottom 50 percent of users accounted for only 5 percent of all prescription drug spending. In addition, the highest spenders (top 1 percent) averaged extremely high annual drug costs (\$14,368), considerably more than the \$6,606 spent on average by those even in the top 5 percent. These data strongly suggest that care and cost management programs targeted to the highest-cost drug users have the most potential to yield substantial savings.

⁹ For detail on the decomposition of the trend in prescription drug spending nationally, 1995-2006, see Ginsburg PB, Strunk BC, Banker MI, and Cookson JP. "Tracking Health Care Costs: Continued Stability But at High Rates in 2005," *Health Affairs* 3 October 2006.

¹⁰ See Borger C, Smith S, Truffer C, Keehan S, Sisko A, Poisal J, and Clemens MK. "Health Spending Projections Through 2015: Changes on the Horizon," *Health Affairs* 22 February 2006 for a discussion of some of the factors influencing the slowdown in drug usage. For the period up to 2005, see also Smith C, Cowan C, Heffler S, Catlin A, and the National Health Accounts Team, "National Health Spending in 2004: Recent Slowdown Led by Prescription Drug Spending," *Health Affairs* January/February 2006. Data from Maryland indicate that use of COX-2 inhibitors among the population studied for this report fell by almost 70 percent between 2004 and 2005.

¹¹ Borger C, Smith S, Truffer C, Keehan S, Sisko A, Poisal J, and Clemens MK. "Health Spending Projections Through 2015: Changes on the Horizon," *Health Affairs* 22 February 2006.

TABLE 2: Distribution of Prescription Drug Expenditures, 2005

USERS*	PERCENTAGE OF ALL SPENDING	AVERAGE
Top 1 Percent	18%	\$14,368
Top 5 Percent	42	6,606
Top 25 Percent	81	2,564
Top 50 Percent	95	1,501
Bottom 50 Percent	5	80

NOTE: *Ranked by total expenditures.

Table 3 groups the users, ranked by spending, into four equal parts each representing one-quarter of the user population and indicates the level of spending at the 25th, 50th, and 75th percentiles of the distribution (the dollar value at the boundary between the four parts). In 2005, spending at the 25th percentile was only \$65, indicating that 25 percent of users spent less than that amount annually. Spending at the 75th percentile was \$767; persons spending more than this amount represent the top 25 percent of spenders and, looking back at Table 2, account for 81 percent of all drug spending. Out-of-pocket spending is only \$30 at the 25th percentile, \$85 at the 50th percentile, and \$235 at the 75th percentile. Out-of-pocket spending falls as a proportion of total spending; it is almost half of spending at the 25th percentile compared to less than one-third at the 75th percentile. This is likely related to the relatively flat copayment structure used by most insurers, where the same amount can be paid by the consumer for a low-cost or high-cost drug. The number of prescriptions filled annually was 2 at the 25th percentile, 5 at the median, and 12 at the 75th percentile.

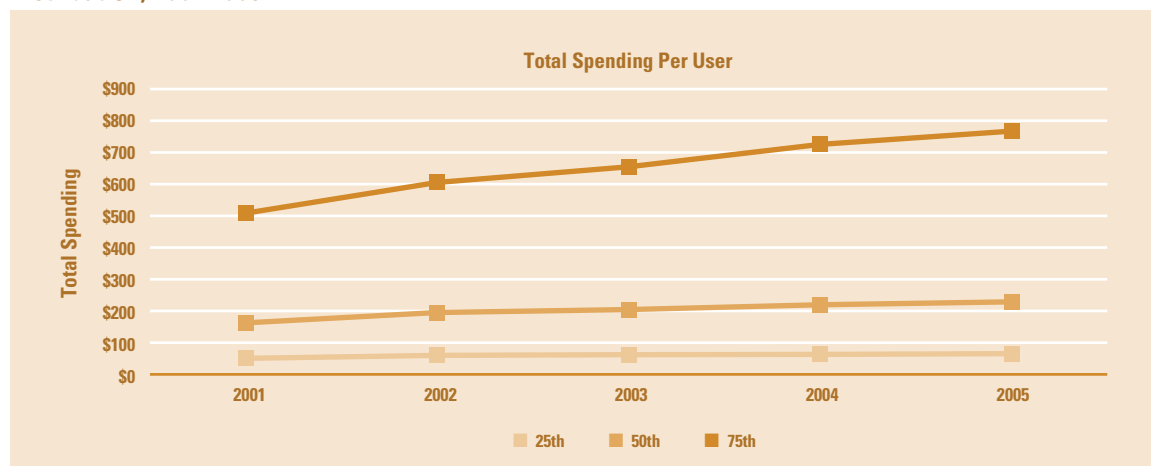
The cost of a prescription at the 75th percentile was \$91, compared to \$11 at the 25th percentile. At higher levels of the spending distribution, individuals not only use more prescriptions (2 per user at the 25th percentile versus 12 per user at the 75th percentile), but the prescriptions are, on average, more expensive (\$11 per prescription at the 25th percentile compared to \$91 per prescription at the 75th percentile). The more than threefold gap in total spending per user—when moving from the 25th to the 50th to the 75th percentile—is attributable to this combination of a larger number of prescriptions and increasingly costly prescriptions.

TABLE 3: Prescription Drug Spending and Use: 25th, 50th, and 75th Percentiles, 2005

	25th PERCENTILE	50th PERCENTILE (MEDIAN)	75th PERCENTILE
PER USER			
Total Spending	\$65	\$229	\$767
Out-of-Pocket Costs	\$30	\$85	\$235
Number of Prescriptions	2	5	12
PER PRESCRIPTION			
Total Spending	\$11	\$43	\$91
Out-of-Pocket Costs	\$8	\$15	\$25

In Figure 3, the trend in per-user spending at each of the percentiles is shown. In the period from 2001 to 2002, total spending per user rose rapidly at all levels of the distribution. However, in subsequent years, spending at the higher end of the distribution (near the 75th percentile) rose at the fastest pace, followed by spending at the 50th percentile, with the least rapid growth at the 25th percentile of the spending distribution. Thus, the gap in spending between the 25th and 75th percentiles widened from a tenfold to a twelvefold difference.

FIGURE 3: Total Prescription Drug Spending Per User at 25th, 50th, and 75th Percentiles of Spending Distribution, 2001-2005



In Table 4, per-user spending is examined for three age groups: children less than 18 years of age, adults ages 18 to 54, and adults 55 to 64 years of age. The spending figures show prescription drug spending at the 25th, 50th, and 75th percentiles of the spending distribution for each age group, for 2003 and 2005, as well as the change between 2003 and 2005. Comparing the three age groups, spending rises quite dramatically with age within each percentile—for example, in 2005, spending for persons less than 18 years of age at the 25th percentile is only \$31 annually compared to \$261 for persons 55 to 64 years of age, a more than eight-fold difference. Similarly, at the 75th percentile, spending increases from \$268 to \$2,058 from the youngest to the oldest age group (an increase of just under eight times). Looking at the changes between 2003 and 2005, within each age group the percentage increases are greater moving from the lower to the higher percentiles. The exception is for the 55- to 64-year-olds, where there is no difference in the rate of growth between the 50th and 75th percentiles.

TABLE 4: Total Prescription Drug Spending Per User, by Age for 25th, 50th, and 75th Percentiles of Spending Distribution, 2003 and 2005

AGE PERCENTILES	2003			2005			CHANGE 2003-2005		
	25th	50th	75th	25th	50th	75th	25th	50th	75th
Less than 18	\$30	\$86	\$230	\$31	\$93	\$268	3%	8%	17%
18 - 54	73	231	662	73	247	740	0	7	12
55 - 64	241	777	1,799	261	884	2,058	8	14	14

How Is Spending Distributed Between Retail and Mail-Order Pharmacies?

Nationally many insurers and employers have adopted strategies to increase mail-order pharmacy use, and recent projections suggest that mail order will account for more than 18 percent of all prescription drug expenditures in 2006.¹² However, as described in more detail in a 2005 report by MHCC,¹³ two subsections of the Maryland Insurance Article directly affect use of mail-order prescribing under insurance contracts written in Maryland and contribute to a lower mail-order use rate in the state. The first regulates the mail-order prescription drug benefit by prohibiting insurance carriers from mandating the use of mail order or offering

¹² "PBM Mail-Order Rx Services Are Expanding; Critics Say Cost Savings Aren't Clear," *Drug Benefit News*, Volume 7, Number 21, November 3, 2006.

¹³ Maryland Health Care Commission and Maryland Insurance Administration, *Mail Order Purchase of Maintenance Drugs: Impact on Consumers, Payers, and Retail Pharmacies*, December 23, 2005.

enrollees reduced copayments as an incentive to use mail order. The second requires that insurance carriers allow enrollees to obtain a 90-day supply of a maintenance drug after the initial prescription. These two subsections allow enrollees to obtain a 90-day supply at the enrollee's choice of retail or mail pharmacy with the same copayment, deductible, or coinsurance.¹⁴

TABLE 5: Mail-Order Share of Drug Spending and Prescriptions by Number of Therapeutic Classes, 2005

Number of Therapeutic Classes in Which Prescriptions Filled	Percentage of Users	Median Spending	Mail-Order Percentage of Spending	Mail-Order Percentage of Adjusted* Prescriptions
TOTAL	100%	\$229	9%	9%
1	24	44	7	6
2 – 3	34	136	8	7
4 – 5	19	384	9	8
6 or more	23	1,240	10	10

NOTE: Prescriptions have been 'normalized' or adjusted so that they are counted in terms of a 30-day supply of medication. Therefore, each 90-day prescription is counted as three 30-day prescriptions. Therapeutic classes were assigned using the Multum Lexicon Database from Cerner Multum, Inc. (Available at: <http://www.multum.com/lexicon.htm> - accessed in November 2006). The lexicon uses the term "therapeutic/chemical categories"; there are 281 different categories, not all of which were found in the database used for this analysis.

In 2005, prescription drugs obtained through mail order accounted for only 9 percent of Maryland's prescription drug spending (Table 5), while retail pharmacies accounted for 91 percent of spending. When viewed in terms of number of prescriptions (rather than level of expenditures), mail order similarly accounted for 9 percent of adjusted prescriptions. Both the mail-order share of spending and the share of prescriptions were virtually unchanged from 2004. (Note that these figures were adjusted for comparisons across retail and mail order, so that all 90-day prescriptions are counted as three 30-day prescriptions.)

Table 5 also shows the number of different therapeutic categories in which persons obtain prescriptions; this is used as a proxy for the number of different conditions being treated, since the prescription drug database does not provide diagnostic information. While there is not a one-to-one relationship between therapeutic categories and health conditions, larger numbers of different therapeutic categories in which prescriptions are obtained are suggestive of relatively more health conditions. Not surprisingly, median annual spending rises with the number of therapeutic categories, from \$44 for persons taking medications in only one therapeutic class to \$1,240 for persons using drugs in six or more categories.

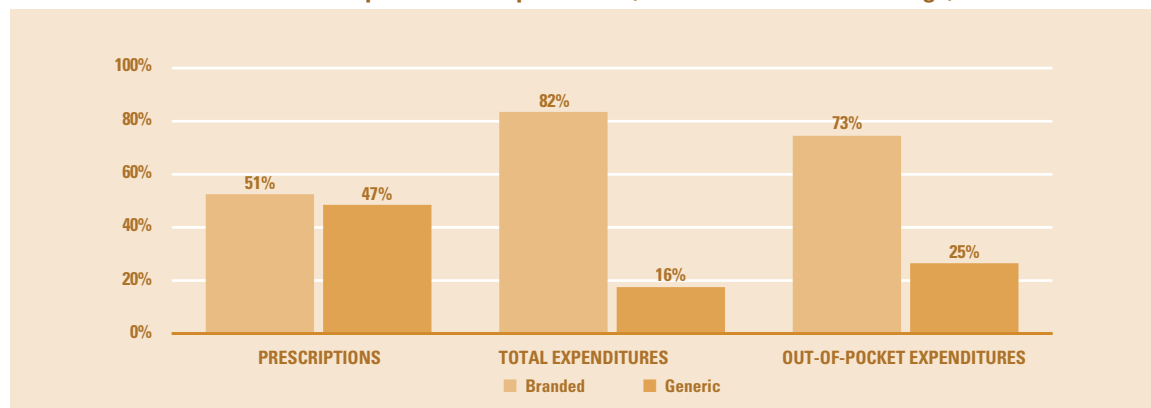
Persons filling prescriptions in a larger number of therapeutic classes are likely to have more chronic health conditions. Because mail-order incentives and mandates are usually targeted to medications for chronic conditions and long-term use, one might expect that the mail-order share would rise with the number of therapeutic classes. As Table 5 shows, however, the differences are not large—persons with drugs in six or more therapeutic classes spend 10 percent of their total drug dollars on mail-order purchases, compared to 7 percent for those using drugs in only one therapeutic class. Similarly, 10 percent of all prescriptions are from mail-order pharmacies for persons with drugs in six or more therapeutic classes, compared to 6 percent of all prescriptions for those using drugs in one therapeutic class. The substantial numbers of persons using drugs in multiple therapeutic categories may provide an opportunity for higher savings with future increased use of mail-order pharmacies.

¹⁴ Maryland Insurance Article § 15-805(d) (2) prohibits insurance carriers from establishing varied copayment levels based on whether the enrollee fills a prescription at a community versus a mail-order pharmacy. Insurance Article Section § 15-824 requires that insurance carriers allow enrollees to obtain a 90-day supply of a maintenance drug, after the initial prescription.

What Proportion of Prescriptions Are for Branded Versus Generic Drugs and How Do Costs Differ?

Figure 4 shows the distributions of prescriptions and total and out-of-pocket expenditures for branded and generic drugs. Branded drugs accounted for slightly more than one-half of all prescriptions, and generic drugs for slightly less than one-half. Because generic drugs generally cost substantially less than branded drugs, although 47 percent of all prescriptions were for generic drugs, they accounted for only 16 percent of spending. Because of the relatively flat copayment structure, consumers pay a higher percentage out-of-pocket for less expensive, generic drugs; however, generics remain a better deal for the consumer than branded drugs—generic drugs account for almost half (47 percent) of consumer prescriptions but only one-quarter of their out-of-pocket expenditures.

FIGURE 4: Distribution of Prescriptions and Expenditures, Branded and Generic Drugs, 2005



NOTE: Percentages do not sum to 100 because, for between 1 percent and 2 percent of claims, branded-generic status is unknown.

In comparison to earlier years, the proportion of prescriptions that were branded fell slightly, from 55 percent in 2003 to 54 percent in 2004 and 51 percent in 2005. The distribution of spending across branded and generic drugs has fallen somewhat less (from 84 to 82 percent, 2003-2005), indicating that the small drop in branded prescriptions was balanced by a slightly more expensive mix of branded drugs. The decline in use of branded drugs is the result of continued emphasis by health plans and pharmacy benefit managers on strategies to increase generic utilization coupled with the loss of patent protection in either 2003 or 2004 for a number of different drugs; some of the most significant were the introduction of generic alternatives for Ortho Tri-Cyclen (contraceptive), Cipro® (quinolone), Wellbutrin SR® and Celexa® (antidepressants), and Neurontin® (gabapentin).¹⁵

One of the purported advantages of expanded mail-order use is the increased ability to substitute generic equivalents for brand-name drugs, in part because the time lag in filling prescriptions allows for more effective use of utilization management techniques, including contacting the prescribing physician to suggest changes. Of interest, in 2005, the proportion of generic drug expenditures was lower for mail-order than for retail pharmacies—13 percent for mail-order and 17 percent for retail pharmacies (Table 6). In terms of prescriptions, generics also accounted for a lower proportion (40 percent) of mail-order prescriptions than of retail pharmacy prescriptions (48 percent).

Because mail-order pharmacies primarily fill longer prescriptions (in terms of days supplied), Table 6 also provides information on the generic share, limiting the analysis to 90-day prescriptions. When only 90-day prescriptions are examined, the generic share of expenditures is virtually the same for both retail and mail-order pharmacies—between 12 percent and 13 percent. There is still a difference in the generic share in terms of prescriptions, however, with mail-order again showing a somewhat lower proportion of generics than retail. The higher proportion of branded drug prescriptions but equivalent percentage of branded drug expenditures suggests that mail-order pharmacies may be applying some of their utilization management strategies toward encouraging substitution of less expensive (in place of more expensive) branded drugs.

¹⁵ Express Scripts Drug Trend Report 2004, <http://www.express-scripts.com/ourcompany/news/industryreports/drugtrendreport/2004/trend.pdf> (Accessed 11-12-06)

TABLE 6: Use of Generic and Branded Drugs, Mail-Order and Retail Pharmacy Comparisons, 2005

	ALL PRESCRIPTIONS		90-DAY PRESCRIPTIONS ONLY	
	Mail-Order Pharmacies	Retail Pharmacies	Mail-Order Pharmacies	Retail Pharmacies
EXPENDITURES				
Percent generic	13%	17%	12%	13%
Percent branded	85	82	86	87
PRESCRIPTIONS				
Percent generic	40%	48%	39%	44%
Percent branded	57	50	58	55

NOTE: Percentages do not sum to 100 because branded-generic status is unknown for a small proportion of claims.

There are a number of other factors that influence the use rates for generics versus branded drugs. Consumer preferences play a key role, as does the availability of generics within specific drug categories. Of interest, while overall generic drugs account for a lower proportion of mail-order pharmacy spending than of retail spending, as discussed in more detail below and shown in Table 7, the share of mail-order versus retail pharmacy spending that is accounted for by generic drugs varies markedly across therapeutic classes.

Which Drug Classes Account for a Significant Share of Prescription Drug Spending?

In Table 7, therapeutic drug categories are ranked by how much they contributed to overall prescription drug spending in 2004 and 2005, with the top 10 therapeutic classes accounting for 35 percent and 34 percent of all spending, respectively. The drugs in these categories may contribute to overall spending either through a high volume of prescriptions, by higher per-prescription costs, or some combination. The therapeutic drug classes contributing the most to spending are statins, antacids, antidepressants, contraceptives, and anti-convulsants. Differences in the share of spending accounted for by drugs in these therapeutic classes have changed negligibly between 2004 and 2005, with the slight exception of selective serotonin reuptake inhibitors (SSRIs). Their share of total spending fell from 5.3 percent to 4.3 percent—probably attributable to FDA warnings about their use in children.

Median spending per user for drugs within each class varies dramatically, from highs of \$555 for HMG-CoA reductase inhibitors (statins) and \$549 for SSNRI antidepressants to a low of \$43 for narcotic analgesics (pain medication). Mean spending (not shown) was highest for miscellaneous anticonvulsants (\$895 per user) and lowest for antihistamines (\$183). Larger differences between median and mean spending indicate that spending for those drugs is more likely to be characterized by some individuals with extremely high spending, perhaps because there are a few particularly costly drugs in that class or because some individuals may fill a very large number of prescriptions.

There is also substantial variation in the distribution of spending across therapeutic categories between mail-order and retail pharmacies, and between generic and branded drugs. With respect to the mail-order share of spending, the low is 1 percent for narcotic analgesics; next lowest are 6 percent each for contraceptives and central nervous system stimulants. At the other end of the spectrum of mail-order share are statins with 15 percent mail-order purchases, proton pump inhibitors with 12 percent, and roughly 11 percent each for antihypertensives and antihistamines. In general, those classes at the higher end of the spectrum are more often used on a long-term basis to treat chronic conditions.

The proportion of each therapeutic class comprising generic drugs is determined, at least in part, by the availability of generic alternatives to branded formulations. In addition, if the relative cost of the branded drug is very high, the use of generics may be less clear when spending (rather than prescriptions) is examined. There are currently no generic SSNRI antidepressants on the market. Both statins and proton pump inhibitors have low fractions of generic spending (2 percent and 3 percent, respectively), though this is likely to change as

the branded statins continue to lose patent protection. The highest proportion of generics in these top 10 therapeutic categories is for narcotic analgesics (40 percent) followed by contraceptives (34 percent).

In the previous section of this report, it was noted that the generic share of both prescriptions and expenditures is higher in retail than in mail-order pharmacies for prescriptions overall, though the share of expenditures is approximately the same when only 90-day prescriptions are considered. In the context of the specific therapeutic categories shown in Table 7, this issue was reexamined. For each class, the generic share of mail-order spending and the generic share of retail spending were calculated. Of the nine classes where there was some generic spending, approximately half of the therapeutic classes exhibited a higher generic share for mail-order pharmacies than for retail pharmacies, while half showed the opposite (for contraceptives, the shares were virtually the same). In other words, the share of spending going toward generic drugs in mail-order pharmacies versus retail pharmacies appears to be quite variable by type of drug rather than being driven solely by the distribution channel. Of interest, the drug classes where generic spending is highest overall are those where it is also higher than average for both retail and mail order. ■

TABLE 7: Top 10 Drug Classes, by Share of Spending, 2005

TYPE OF DRUG AND DESCRIPTION	SHARE OF ALL SPENDING		Median Spending Per User (for Drugs in Class)	Mail-Order Share of Spending	GENERIC SHARE OF SPENDING		
	2004	2005			All	Mail Order (%)	Retail (%)
HMG-CoA reductase inhibitors <i>Commonly known as statins, used to lower cholesterol.</i>	7.3%	7.2%	\$555	14.9%	2.1%	3.1%	1.9%
Proton pump inhibitors <i>Used to treat acid reflux, heartburn, stomach ulcers.</i>	5.9	5.8	520	12.0	3.3	6.2	2.9
Selective serotonin reuptake inhibitors (SSRIs) <i>Newer antidepressants with fewer side effects than the older tricyclic antidepressants.</i>	5.3	4.3	241	9.9	20.5	29.6	19.5
Contraceptives <i>Used to suppress ovulation and prevent conception as well as to treat conditions of the reproductive system.</i>	3.2	3.1	214	6.0	34.0	34.1	34.0
Miscellaneous anticonvulsants <i>Most commonly used to treat epilepsy.</i>	3.1	3.0	432	9.5	18.9	18.3	19.0
Central nervous system stimulants <i>Includes many controlled substances, used to treat attention-deficit hyperactivity disorder (ADHD) and narcolepsy.</i>	2.5	2.7	399	6.3	8.6	4.4	8.9
Antihypertensive combinations <i>Combined agents used to treat high blood pressure, may include two of—beta blockers, diuretics, ACE inhibitors, and calcium channel blockers; increases efficacy while reducing side effects.</i>	1.9	2.1	122	10.7	12.7	14.0	12.5
Narcotic analgesics <i>Includes codeine, hydrocodone, and other agents that act in the central nervous system to reduce pain.</i>	2.3	2.1	43	1.1	40.1	25.1	40.2
Antihistamines <i>Used for treating allergy symptoms.</i>	2.0	2.0	79	11.5	10.4	8.1	10.7
SSNRI antidepressants <i>Newer antidepressants affecting two transmitters (serotonin and norepinephrine).</i>	1.7	1.8	549	8.2	0	0	0

3 Summary and Conclusions

In 2005, the median annual expenditure per user for prescription drugs was \$229, including the costs paid by the insurer (\$144 or 63 percent) as well as the out-of-pocket costs paid by the consumer (\$85 or 37 percent).

- Rapid growth in total per-user spending between 2001 and 2002 has slowed; annual spending for the typical user increased by approximately 5 percent from 2002 to 2005.
- Growth in out-of-pocket spending, while increasing more rapidly than total per-user spending, has also moderated. Insurer contributions to spending—on both a per-user and a per-prescription basis—have fallen over the five-year period examined.
- Adjusted for price inflation, median per-user total spending and spending per prescription grew only modestly from 2002 to 2005, with ‘real’ spending per prescription falling slightly in 2005. This indicates that, for the typical user, use was relatively flat, with price inflation accounting for almost all of the increase in nominal spending between 2004 and 2005.
- Changes in use were a more important factor for changes in *mean* spending, accounting for almost half of the change between 2004 and 2005. Thus, the very high spenders who dominate mean spending may be less influenced by cost-containment measures such as switches to generic use that have constrained spending of the more typical user.
- In Maryland, as well as nationally, the slowdown in spending growth was primarily attributable to a slowdown in the growth of drug use.

A small group of high-cost users accounts for a substantial share of drug expenditures.

- The top 1 percent of users with the highest drug spending accounted for 18 percent of all drug expenditures.
- The bottom 50 percent of users accounted for only 5 percent of all prescription drug spending.
- Spending at the 25th percentile was only \$65 annually, whereas spending at the 75th percentile was \$767.

As in 2003, the Maryland prescription drug market is dominated by retail pharmacies.

- Only 9 percent of drug prescriptions are dispensed through mail-order pharmacies; retail pharmacies account for 91 percent of all prescription sales.
- Users of a large number of therapeutic classes of drugs spend only a slightly higher proportion on mail-order drugs and order only slightly more prescriptions through mail order than those who rely on a small number of therapeutic class drugs.

Branded drugs accounted for slightly more than one-half of all prescriptions; generic drugs accounted for slightly less than one-half.

- Generic drugs accounted for 47 percent of all prescriptions, but only 16 percent of spending.
- Despite the fact that the relatively flat copayment structure means that consumers pay a higher percentage out-of-pocket for less expensive drugs, generic drugs remain a better deal than branded drugs—generic drugs account for almost half (47 percent) of consumer prescriptions but only one-quarter of their out-of-pocket expenditures.

- ➔ From 2003 to 2005, there was a shift from branded to generic drugs. The generic share of prescriptions increased slightly from 43 percent of all prescriptions in 2003 to 44 percent in 2004, with the pace of change quickening to reach 47 percent in 2005. This was likely due to specific drugs' losing patent protection in 2003 and 2004, combined with health plans' continued emphasis on increasing generic utilization.

A limited number of therapeutic drug classes account for a significant share of prescription drug spending, with the top 10 therapeutic classes accounting for 34 percent of spending in 2005.

- ➔ The drugs contributing the most to spending are statins, antacids, antidepressants, contraceptives, and anticonvulsants. Median spending per user for drugs within each class varies dramatically, from a high of \$555 for statins and \$549 for SSNRI antidepressants to a low of \$43 for narcotic analgesics (pain medications).
- ➔ There is substantial variation in the distribution of spending across therapeutic categories between mail-order and retail pharmacies, and between generic and branded drugs.
- ➔ The generic share of spending in retail versus mail-order pharmacies varied by therapeutic category—of the nine therapeutic classes where there was some generic spending, there was an even split between those with a higher percentage of retail generic spending compared to a higher percentage of mail-order generic spending. The share of spending going toward generic drugs in mail-order pharmacies versus retail pharmacies appears to be quite variable by type of drug rather than being driven solely by the distribution channel.

Technical Background: Summary of Data and Caveats for This Report

Tables and figures in this report are based on services and payments captured in the Prescription Drug Component of the MCDB. The Prescription Drug Component is based on a subset of data found on insurance claims paid by most private insurers in Maryland. Insurance companies and HMOs meeting certain criteria, namely, that they are licensed in Maryland and collect more than \$1 million in health insurance premiums, are required to submit information to MHCC under the Code of Maryland Regulations (COMAR) 10.25.06. For calendar year 2005, the Commission received data from all major health insurance companies.

Interpreting the results of this report requires an understanding of the limitations of the database, and how it differs from other data collected and analyzed by the Commission. First, the database comprises prescription drug claims from private insurers. Thus, the database has no information on prescription drug use for persons who are uninsured, those who are insured but do not have drug coverage, Medicaid enrollees, and Medicare beneficiaries without private supplemental drug coverage. Because a substantial proportion of Medicare beneficiaries have no private supplemental drug coverage, the elderly population (persons over age 65) is excluded from these analyses.

Perhaps more importantly, there are no data available on enrollment in plans that provide prescription drug coverage, information that could serve as a denominator in these analyses. For this reason, estimates presented in this report are based on users—persons with at least one prescription drug claim filed during the year. Because these estimates are derived using data on prescription drug users and exclude individuals with private drug coverage who had no prescription drug use in a given year, many estimates will likely be higher than estimates from other sources that use enrollees as the denominator. In addition to omitting covered persons without drug use, the database is limited to persons covered by drug contracts with large Maryland insurers (e.g., if an employer, such as the State of Maryland, contracts directly with a pharmacy benefit manager [PBM] for drug coverage, then use is not included).

In terms of the quantities presented in this report, each drug claim record is counted as a prescription regardless of the number of days supplied or the drug strength or dosage. In specific analyses, we control for number of days supplied in order to account for differences in the cost of the prescription. Total expenditures include payments from the insurer and patient, including any deductible and coinsurance or copayment amounts reported on the claims data. Expenditures cited in this report reflect prices before rebates. Because PBMs are better able to negotiate price and other concessions with drug manufacturers, pricing differences between mail-order and retail pharmacies may be greater than reflected in this report. ■



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